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January 23, 2003

**Via Electronic Filing**
Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

**Re: Sinclair Broadcast Group Inc.**
***Ex Parte* Presentation**
**MM Docket No. 00-39: *Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television***

Dear Ms. Dortch:

On January 22, 2003, Nat Ostroff and Mark Aitken of Sinclair Broadcast Group Inc. ("Sinclair"), along with Kathryn Schmeltzer and David Konczal of Shaw Pittman LLP, counsel for Sinclair, met with Susan Eid, Legal Advisor to Chairman Powell; Kenneth Ferree, Chief, Media Bureau; Rick Chessen, Chief, DTV Task Force; and Robert Bromery and Alan Stillwell of the Office of Engineering and Technology, to discuss Sinclair's pending Petition for Partial Reconsideration in the above-captioned proceeding asking that the Commission require that the recently mandated DTV tuners provide "adequate" reception of over-the-air DTV signals as required under the All Channel Receiver Act. Sinclair distributed and discussed the issues contained in the attached paper entitled "Compelling Reasons to Better Define DTV Tuners."

Please direct any questions regarding this matter to the undersigned.

Very truly yours,

Kathryn R. Schmeltzer
David S. Konczal

cc: Robert Bromery
Rick Chessen
Susan Eid
Kenneth Ferree
Alan Stillwell

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# COMPELLING REASONS TO BETTER DEFINE DTV TUNERS

Nat Ostroff
Vice President-New Technology
Sinclair Broadcast Group Inc.

## Background

The All Channel Receiver Act ("ACRA") grants the Commission the authority to require TV receivers to be "*capable of adequately receiving*" all TV channels. In August 2002, the Commission mandated pursuant to the ACRA that all TV sets have integrated DTV tuners pursuant to a phased-in schedule. Second R&O and Memorandum Opinion & Order, MM Docket 00-39, 17 FCC Rcd 15978 (2002) ("DTV Tuner Order"). The Commission, however, did not define what a DTV tuner is supposed to do or how it is supposed to perform. Rather, the Commission simply required that DTV tuners provide "satisfactory and usable reception" without defining those terms, thereby leaving these terms dangerously open to interpretation. Relying on the marketplace to define "satisfactory and usable reception" will not suffice, as consumer electronics manufacturers have unequivocally expressed their view that over-the-air DTV is not a worthwhile market. Thus, on November 8, 2002, Sinclair Broadcast Group, Inc. ("Sinclair") filed a Petition for Partial Reconsideration of the DTV Tuner Order urging the Commission to take action to ensure that DTV tuners provide "adequate" over-the-air reception. Absent such action, the future of free, over-the-air DTV is in jeopardy.

Sinclair's Petition has already received support from Hammett & Edison, Inc. ("H&E"), a recognized leader in engineering services for the broadcast industry. See Comments of H&E, MM Docket 00-39 (Jan. 16, 2003). (Sinclair notes that it does not retain H&E for engineering services and H&E arrived at its conclusions independently.)

## Relying on the Marketplace to Ensure that DTV Tuners Provide "Adequate" Over-the-Air DTV Reception Jeopardizes the DTV Transition and the Future of Free, Over-the-Air DTV

Broadcasting by its nature entails both a "transmit" component and a "receive" component. Any transmit-receive system is just that -- a system. Both ends of that system must meet certain minimum criteria in order for the overall system to work successfully. To date, the Commission has primarily focused on the "transmit" component, requiring broadcasters to meet very stringent and specific performance standards with respect to their DTV transmitters. The Commission has not devoted similar focus to the "receive" component. Rather, the Commission has assumed -- but not required -- that DTV receivers would meet certain performance standards.

Consumer electronics manufacturers have made it abundantly clear that they oppose any government-imposed performance standards on their products. They have also made it abundantly clear that they are not interested in supporting a free over-the-

air DTV service, choosing instead to focus on DTV delivered over cable and satellite. Cable and satellite, however, are not free nor are they ubiquitous. As Chairman Powell recently explained, "Over-the-air tuners affect tens of millions of consumers." If the marketplace is flooded with poorly performing over-the-air DTV receivers, it is likely that the DTV transition will never accelerate, with little time to redress the situation by creating better products.

Lack of reliable over-the-air DTV reception is one of the fundamental reasons why the DTV transition has been stalled for years. Manufacturers have recognized the difficulty in providing reliable over-the-air DTV reception and, instead, focus time and resources on developing DTV sets that can receive DTV signals delivered via cable or satellite. Manufacturers have limited their over-the-air DTV product offerings and instead continue to sell massive numbers of soon-to-be-obsolete analog sets.

If the Commission does not act to protect the interests of those millions of viewers who cannot afford or simply do not wish to subscribe to cable or satellite, it is risking the disenfranchisement of a large segment of the American population.

## The Commission Should Define "Adequate" Over-the-Air DTV Reception

By defining "adequate" over-the-air DTV reception, the Commission can take a dramatic step to accelerate the DTV transition and to preserve free over-the-air DTV. Such a step will allow the DTV transition to accelerate independent of the cable industry's schedule for delivering DTV signals. By specifying the most critical elements of "adequate" performance of the mandated DTV tuners, the Commission will ensure that the American public continues to have an option to receive free over-the-air DTV.

Such action would be consistent with Commission precedent. In adopting requirements for adequate reception of analog UHF signals pursuant to the ACRA, the Commission did not simply require that all TV sets provide "adequate" UHF reception and then leave it to equipment manufacturers to decide what "adequate" meant. Rather, the Commission determined that allowing the marketplace to define "adequate" would not suffice. Instead, through a series of decisions, the Commission carefully defined the technical requirements for analog tuners used in TV sets today. Such definition is even more critical for DTV tuners, given that the environment in which a DTV tuner must function is much more severe than what current analog TV sets face today.

## Proposals for Defining "Adequate" DTV Reception

At the beginning of the DTV transition, the Commission created a DTV Table of Allotments that was based on certain assumptions about the performance of DTV tuners. To better utilize the UHF spectrum, the Commission's engineers determined that adjacent and co-channel assignments for nearby markets as well as the use of "taboo" channels were possible, but only if DTV receivers met certain performance specifications for selectivity, sensitivity, and dynamic range. Sinclair urges the Commission to require that DTV tuners meet these specifications as well as require that DTV tuners include an adaptive equalizer to overcome multipath interference.

1. **Receiver selectivity.** The selectivity of a receiver is a measure of how well that receiver can separate signals on nearby channels. This characteristic becomes especially vital given that the DTV Table of Allotments is characterized by never-before-authorized adjacent channel allocations. If DTV tuners reach the marketplace that cannot adequately separate two adjacent channels, viewers will not be able to receive their desired DTV station.

2. **Receiver sensitivity.** The sensitivity of a receiver is a measure of how well that receiver can receive weak signals. It is usually expressed as a "noise figure." Essentially, it is a measure of the level of self-generated noise in the DTV tuner. The Commission's engineers assumed that UHF DTV tuners deployed in the marketplace would have a 7 db noise figure. Based on that assumption, the Commission calculated the power level and coverage of DTV stations. If the DTV tuners that enter the marketplace are less sensitive than that assumed by the Commission, many DTV stations may not cover their DMA even when operating at maximum licensed power.

3. **Dynamic range.** Dynamic range refers to the ability of a receiver to perform over a wide range of signal strengths. The Commission's decision to assign adjacent channels in the same market not only assumes excellent receiver selectivity, but also assumes that the receiver can avoid being overloaded by a strong but unwanted near adjacent channel. If a receiver's dynamic range is inadequate, then viewers may not be able to receive many stations that operate in strong signal markets.

Dynamic range is also a measure of how well a receiver performs when receiving a weak signal in the presence of a strong signal not immediately adjacent in frequency. This condition will occur for viewers who live between two markets and are trying to receive the more distant station. Again, if dynamic range is inadequate, then viewers may not be able to receive their desired DTV station.

4. **Adaptive Equalizer to Mitigate Multipath Propagation Effects.** In order to receive a DTV signal, the receiver must be able to decode the signal in the presence of multipath propagation. This is accomplished by including an adaptive equalizer in the tuner. Without a requirement for such an equalizer, DTV sets will enter the marketplace with tuners designed for the much simpler cable environment. Such DTV sets would be inadequate for use as over-the-air receivers.